

About the Brown Lacewing *Hemerobius schedli* Hölzel, 1970 (Neuroptera: Hemerobiidae) and its Distribution

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Abstract: A collection of lacewings from a hilly landscape in north-western Bulgaria contained a specimen of a brown lacewing, initially erroneously identified and reported as *Hemerobius schedli*. However, this species is considered to be restricted to montane habitats and has not been recorded from low altitudes; all known specimens that have been reliably identified support that this species is associated with *Pinus* trees at high altitudes. All information about the distribution of *H. schedli* is reviewed and commented. The discussed specimen from Bulgaria belongs to *Hemerobius handschini*.

Key words: Neuroptera, *Hemerobius schedli*, *Hemerobius handschini*, Bulgaria, montane lacewing

Introduction

A collection of 113 specimens of Neuroptera, including chrysopids and hemerobiids, made in a hilly biotope of north-western Bulgaria included a single specimen that was initially identified as *Hemerobius schedli* Hölzel, 1970 (see THIERRY & CANARD 2018). However, the capture of this species at such low altitude seemed incongruous. In this article, we review the known distribution of *Hemerobius schedli* and propose re-identification of the specimen collected from NW Bulgaria.

Materials and Methods

A survey of lacewings was carried out by hand-net sweeping by one of the present authors (DT) in July 2001 in the neighbourhood of Belogradchik (N43°37' E22°41'). A single male specimen of a brown lacewing was subsequently reported as *Hemerobius schedli* (see THIERRY & CANARD 2018). However, the identity of this specimen was called in question by the first author of the present note, an expert on Balkan Neuropterida, primarily because the capture site being at the relatively low altitude

of 550 m and was not a part of any mountain chain. In order to check the possibility *H. schedli* to occur in this area, we reviewed the distribution of this species as recorded in the literature and also requested for additional information our colleagues from Italy, Czech Republic and Slovakia.

Results

All known specimens of *H. schedli* have been obtained from sites located within mountain chains, nearly all at altitudes between 1800 and 2200 metres a.s.l. Below these altitudes, only two specimens have been collected at 1450 m and 1730 m (HÖLZEL & WIESER 1999) in Carinthia (Austria). Above these altitudes, only one specimen was found at 2740 m (BERON 1999) on Marishki Chal Peak in Rila Mts. (Bulgaria) but most likely it has been drifted there by wind. Additionally, *H. schedli* is considered to be exclusively linked to conifers of the genus *Pinus* growing in alpine situations. So far, this species was published as occurring on two species of *Pinus*: *P. cembra* in Austria (HÖLZEL 1970) and *P. peuce* in



Fig. 1. Distribution of *Hemerobius schedli* (on a free map from D. DALET <© histgeo.ac-aix-marseille.fr>)

Bulgaria (POPOV 1986). The vegetation of the area of Belogradchik is dominated by deciduous trees and bushes within a rolling, hilly landscape. Re-examination of the discussed specimen has revealed that its correct identity is in fact *Hemerobius handschini* Tjeder, 1957.

Discussion

Hemerobius schedli is a European rare species, known from only a few montane locations within high altitude ecozones (Fig. 1). It occurs from west to east: in the **Pyrenees**: (1) France, Pyrénées-Orientales, without any exact locality (ASPÖCK et al. 1980); in the **Alps**: (2) France, Alpes-Maritimes, Parc du Mercantour (TILLIER 2015); (3) Liechtenstein, Kuhgrat (GEPPE 1986); (4) Switzerland, Graubünden, Upper Engadine (MONSERRAT 1991); (5) Italy, Lombardy (LETARDI 2017); (6) Italy, Trentino-Alto Adige (LETARDI et al. 2010); (7) Austria, Tirol, Ötztal (HÖLZEL 1970); (8) Austria, Carinthia, Heiligenblut and Gurktal (HÖLZEL & WIESER 1999); (9) Austria, Styria, Dachstein (HÖLZEL 1970); in the **Tatra Mountains**: (10) Slovakia (ZELENÝ 1977); in the **Rila Mountains**: (11) Bulgaria, Eastern Rila, Musala Ridge: Musala area and Maritsa area (POPOV 1986, BERON 1999).

The knowledge on the occurrence of *H. schedli*

in Slovakia needs more comments. In his checklist on Neuroptera in Czechoslovakia, ZELENÝ (1977) reported it as firstly recorded in Slovakia without to give an exact locality. ASPÖCK et al. (1980), according to Zelený (in litt.), restricted the distribution of the species in Czechoslovakia to the Tatra Mts. In the second checklist of Neuroptera of Slovakia and the Czech Republic, JEDLIČKA et al. (2004) interpreted this case as follows: “Even though he [ZELENÝ (1977)] did not publish precise data, we have no reason to reject his statement and the occurrence of such species [*H. schedli* and some other species] is accepted in the present checklist. However, if such records are not confirmed later, we do not consider them fully reliable”. The first author of the present note remembers that Dr. Jiří Zelený informed him years ago that he collected *H. schedli* in the Tatra Mts.

The Czech Republic was entered erroneously in the range of *H. schedli* (and many other species) by ASPÖCK et al. (2001) when the authors have replaced Czechoslovakia from ASPÖCK et al. (1980) with the Czech Republic instead of Slovakia. Unfortunately, this mistake is multiplied in the Fauna Europaea (ASPÖCK et al. 2013) and other data-bases.

Besides, DOROKHOVA (1987) included erroneously Spain (namely Pyrenees) in the range of *H. schedli*. This species does not occur in Spain

(MONSERRAT 2015). It has been found only on the northern (French) slope of the Pyrenees (Fig. 1).

Conclusion

After re-examination of this alleged specimen of *Hemerobius schedli* from Belogradchik, it appears that it was identified from a flawed assessment of gross morphology only, without detailed examination of features of its genitalia. It is in fact a specimen of the ubiquitous *H. handschini* and this revised identification is confirmed by a close examination of its genitalia. Consequently, the previously published report of *H. schedli* in north-western Bulgaria is corrected as referring to *Hemerobius handschini*.

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